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EDUCATIONAL PHILOSOPHY STATEMENT

BACKGROUND

I have wanted to be a teacher for most of my life. I've had amazing teachers who have inspired me and introduced me to new things that have molded who I am today and what I am passionate about. I have changed my mind several times in my life about what I would want to teach, and it usually had something to do with a teacher who was helping me to expand my horizons. After having ambitions to become a music teacher for many years, I decided that I would rather pursue environmental education. Teaching people about the environment, natural resources, and sustainability is very important to me because it is something that effects the health and well-being on everyone on the planet and generations to come. My love for nature and spending time outside is another factor that influenced my decision to become an environmental educator. I want to be able to provide my students with meaningful experiences in nature and use the environment as a classroom.

Science was not always my favorite subject in school, and it was not until I was able to get outside and experience the content that I really began to love it. Because I have always loved English and the social sciences, I tend to view science from an interdisciplinary perspective. Science comes alive when you can experience it with all

of your senses, understand the societal context, and use the arts to reflect on knowledge and explore implications.

I am also very passionate about English and believe that literature, media, technical writing, and creative writing are some of the best vehicles for understanding culture and society. I love British literature, poetry and classics, but would also love to incorporate more modern genres and forms of media into my classes such as musicals, television, and movies.

I believe strongly in a pragmatic approach to education. Learning should be meaningful to students and provide them with the skills and knowledge they will need to succeed later in life. What a student need to learn to fulfill this criteria is changes with time, place, and individual. Curriculum, instruction, and assessment all need to be adapted accordingly to ensure that students receive the full benefits of their education. Schools serve the purpose of building community and preparing young people for the full responsibilities of citizenship, but the first step in ensuring that schools meet this purpose is making sure that schools are serving the needs of students.

Two of the theories of education that are most appealing to me are reconstructionism and perennialism. Perennialism appeals to me because of the weight it puts on the classics and ideas that have been influencing thought for significant spans of time. By studying these ideas, students can access underlying truths about culture and human nature that are applicable to the world today. Perennialism gives students a better understanding of history as well as their own era and allows them to see what changes have occurred and what hasn't changes. This cultural awareness can be very useful in a reconstructionist curriculum as well. Thorough understanding of the

development of culture is important to looking at social issues in context and considering solutions and strategies for change. Reconstructionism is a way of teaching empathy and engaging students in authentic learning that has meaningful effects in the world.

SCIENCE

Science at its most basic is the understanding of the natural world. Often, science is viewed as something abstract, technical, and advanced that is beyond the understanding of all but first rate minds. I believe that this impression needs to change in our society because so much of science is seen and experienced everyday. Students encounter science that they can understand at least on a basic level when they eat breakfast; walk, drive, or ride to school; or play sports. Everyday students have chemistry and biology happening in and around them, geology working under their feet, and physics moving them through the world. Not every student is going to like science or want to be a scientist, but I want all of my students to understand how science affects them everyday and to develop the understanding to work through scientific concepts that they might encounter in life themselves. Ignorance of how all of these scientific cycles and processes function can be detrimental to personal and environmental health, technological advancement, and societal growth.

Scientific literacy is vital to the advancement of a society and it is important for all citizens to possess basic skills in scientific literacy. Being able to observe and understand changes in the universe, the environment, or the human body gives societies the opportunity to respond by changing behavior or developing new

technologies. Without an understanding of what is happening in the world around us, especially on a micro or macro scale, we are limited in our ability to respond. Science is often politicized and a culture's understanding of and response to scientific research often has profound impacts on the world around us. In these situations it is very important that the society, not just an elite group of scientists, is educated and prepared to respond. Voters may be presented with ballot items related to ecological preservation, water systems, public health, or alternative energy and are responsible for educating themselves on the subject and making a sound choice for the society. For this reason, it is of the utmost importance that our citizens be able to work with scientific information, make criticisms of data, and identify implications of certain actions in a wider context.

My main goal as a science educator is to improve the scientific literacy of my students. I would like my students to be able to develop the skills to break down and analyze scientific information independently. To attain a higher level of scientific literacy, students need to be able to question scientific claims and analyze what they are told, rather than just comprehending it. Beyond that, I hope that I can make science real and relevant to my students and inspire an interest in the natural world around them. As an environmental educator, I think it is important that students have first hand experiences in nature and consider their role in a global ecosystem. Some students may have a more advanced awareness of the natural world around them, their impacts on nature, and the various ways nature changes, but for many students this needs to be taught. It is not a given that every child is afforded or takes advantage of the opportunity to play

outside. Students not only need to be taught about their natural environment, they also need to have opportunities to observe and experience nature.

A year long theme in my classes will be the nature of science (NOS). The study of the nature of science is the study of “the values and assumptions inherent to scientific knowledge and the development of scientific knowledge” (Lederman and Lederman, 2004). Teaching the nature of science is the foundation of scientific literacy; many people have misconceptions about the scientific process and what kinds of questions can be investigated through scientific inquiry. Before specific content can be meaningful, students need to appreciate the basis of the field and the limitations of scientific inquiry. Khishife and Lederman found in their 2006 study that explicitly teaching NOS throughout a unit (or a year) lead to increases in student understanding of NOS compared to an implicit approach. Students benefited from taking part in NOS curriculums that were integrated into other content and non-integrated explicit instruction. In my classroom I would most likely use a mixture of integrated and non-integrated NOS teaching strategies and activities. At the beginning of the year, or semester, I would introduce NOS and lead several non-integrated NOS activities. This would familiarize the students with the seven aspects of the nature of science, as defined by Lederman and Lederman (2004):

- 1) The difference between observation and inference
- 2) The difference between scientific laws and theories
- 3) Science is based on observations of the natural world
- 4) Science involves human imagination and creativity
- 5) Scientific knowledge is partially subjective

6) Science is socially and culturally embedded

7) Scientific knowledge is subject to change

Students will be expected to be familiar with these seven aspects of the nature of science and refer to them throughout the year when they are relevant to the curriculum.

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Without this solid framework, learning science content is less meaningful. Clough and Olson argue that students today are developing incomplete or inaccurate views of NOS

from their textbooks, media, and experience with science. They further explain that:

“Understanding how science works is crucial to scientific literacy because bound up in content and public policy decisions involving science are issues regarding what science is, how knowledge in science comes to be accepted, and what science can and cannot do.” Without this solid grounding in NOS, learning science content is less meaningful.

I would like to teach science in with a reconstructionist focus. I think this approach to science will enable students to see why science is relevant to them and teach them how scientific problem solving works in the world around them. This approach goes beyond teaching the concepts and looks at the societal implications of scientific discovery and innovation while also giving students experience working in the scientific community. Students will also be encouraged to develop strong communication skills through reading scientific texts, discussing concepts, and writing about their work.

Environmentalism is the focal point of much of the curriculum I would like to introduce to my students. Environmental and climate science is extremely accessible

and relevant and is a natural way to engage students in experiential learning. Authentic learning in nature enables students to directly connect the concepts they are learning to the environment around them. In addition, encouraging and enforcing time outdoors enables students to develop an appreciation and curiosity for the world around them. Getting students outside not only enriches science content, it also supports physical and mental health amongst generations that are suffering from “nature deficit disorder.”

LEARNING

The purpose of education is to develop the mind of the student. As a teacher, I will always try to ensure that my teaching is not “about me” and that I am always revising my curriculum so that it is meeting the needs of my students and challenging them appropriately. It is important that I know the strengths and needs of my students well and can assess when a student needs more instruction or a greater challenge. In order to teach my content, I need to be able to know that my students are academically, socially, and emotionally ready to learn. Without developing this kind of rapport with my students I will not be as effective as a teacher.

I believe students need to be self-motivated to learn in order to be life-long learners. Not all students come to school with this motivation, however. It is important to take a pragmatic approach to education and make learning a meaningful and useful pursuit for students. Rather than learning facts with the motivation of a good grade, students should be given the chance to learn through experiences that are relevant to them at that stage in their development and also help them expand their horizons. In order to make learning meaningful and useful to students, it is important to take the time

to know them individually and understand what they want to get out of school and how you can assist them. This is in line with humanist ideas on education. Mass Customized Learning and authentic curriculum are two methods of shifting the classroom to a student or learner-centered environment and engaging students in taking responsibility for their education.

Mass Customized Learning (MCL) presents many exciting opportunities for students and teachers. MCL would allow students to work at a comfortable pace and aspire toward mastery rather than complacently accepting final grades. The implementations of instructional technology and a portfolio based systems give students easy access to feedback and evidence of their learning that can be shared and used to evaluate students more fully than a list of grades. In keeping with pragmatic and reconstructionist ideas about education, I would like to incorporate project based learning and service learning into my classes. Throughout various projects, students would need to collect evidence of the planning and implementation process as well as reflecting on their work. Formative assessments will be used often to ensure that students are on track and to inform my planning process.

For teachers and students, MCL may seem like it means more work, but it is really a fundamentally different kind of work. Rather than the pressure being on the teacher to lecture and “perform” for a full 80 minute class, the MCL teacher will need to invest more time in providing feedback to students, differentiating and scaffolding learning opportunities, and organizing the classroom and online resources so that student have access to the tools they need to manage their own learning. Rather than spending a class on one attempt to get through to a class of 20 students, I would be

investing my time in helping each student take another step towards mastering the material. In that class, hopefully, I would be able to have a dialogue with each student about how I can help them, rather than hoping that one message will address the needs of everyone in the class. Although this is different from traditional teaching strategies, I believe it is more a more worthwhile use of time for students and teachers.

Authentic curriculum is an amazing way to instill lifelong learning skills in students. Besides engaging students in learning by appealing to their interests, it also teaches students how to structure learning in a way that is constructive and makes sense to them. The more familiar students are with the process of organizing and structuring learning the more likely they are to be able to communicate their needs to teachers, coworkers, or supervisors in the future or seek any supports or accommodations that they need. Authentic curriculum is also a great way for students to connect with the community and professionals in fields of interest to them. Authentic curriculum could open up doors for students to do meaningful work in potential career fields. This kind of experience build resumes for students and is much more informative to students than typical job shadow experiences.

I would like to incorporate service learning and opportunities for my students to design individualized projects into my classes. Beyond the exciting content my students could uncover, I think it is the best way to teach important professional skills and allow students to practice and develop these skills. This type of project is accessible to any student and is a way of naturally differentiating instruction to ensure each student is being challenged and getting the most out of their education. Although it is a lot of work to support each student's project, it would be a great opportunity to collaborate with

other teachers and community members to mentor students. It would also give students a chance to function in more of a professional environment, versus a typical classroom.

When teaching science, one of the most important aspects of every lesson is assessing what students already know. Research has shown that one of the biggest setbacks to students in science education is not having an opportunity to assess and address misconceptions (Stephans, Beiswenger, & Dyche, 1986). If students are not challenged to explain scientific concepts or provided with experiences that challenge their misconceptions it is likely that they will continue to have incorrect ideas about concepts discussed in class even if they are able to memorize content and perform well on assessments. In order to foster long-term understanding in my students I will try to identify misconceptions, provide students with opportunities to challenge and reform their ideas, and make concepts real and applicable.

All students can access the science curriculum on some level. Some students may struggle with abstract concepts or some may find equations and formulas challenging, but through the use of engaging experiences, demonstrations, or labs or analogies (Orgill and Thomas, 2007) that connect concepts to things that students are familiar with all students can make meaningful connections to the content. Some students may need the curriculum to be broken down into manageable parts with lots of concrete, real-world applications and examples. Others may delve deeply into certain subjects or ideas indicating that they are ready for more opportunities to continue learning.

CLASSROOM

I plan on having a learner-centered classroom that extends beyond the borders of my subject and the school. I want my students to have a voice in what we do as a class and actively help plan learning experiences. Science cannot be relevant to students if it is taught in isolation from other subjects. Students will be pushed to use literacy skills and make connections to mathematics, social studies, and the arts. I want students to experience working professionally in the community and practice learning outside of the school building.

The classroom itself should be exciting and filled with samples of natural objects students can interact with and tools they can use to learn more about the world around them. I think it is important to have things in the classroom that spark students' curiosity and give them the opportunity to explore. I also think it is important to have resources for assignments and instruction available to students in the classroom and online so that they have access to the materials they need to manage their own learning. Having a classroom and materials that are open to students to use is in line with the idealist view that learning should be self-directed. This design ties into Locke's idea that students learn through interactions with the world around them.

Technology is an important aspect of education for today's students. Students in my class will practice using technology responsibly in the context of real-world applications. Locke believed that children and adolescents should be treated as "adults in the making" and I believe this is especially important when using technology. Students will need strong skills in technological literacy for their future careers so it is important that these skills are taught in school. I want to make sure that I give my

students opportunities to find and share information safely and intelligently using technology and use technology to complete project with real world impact.

LEADERSHIP

I see my role a teacher in a student-centered classroom as that of a facilitator or coach. I do not want to direct student learning, because that inhibits students from developing the skills needed to be life-long learners. As a teacher my job will be to connect my students with valuable learning opportunities, organize materials and resources for them, and provide thorough and timely feedback on their progress.

I believe a superior teacher is one that can listen to what her students are telling her. Sometimes students know what they need and can communicate that, but other times it is more unclear and a teacher has to decode the signs that something is holding the student back from meeting his or her potential. I hope to be very open with my students and be a person they trust enough to come to if they need help. I will also try to get to know my students so that I will be able to tell if they are struggling and keep track of how they are doing outside my class.

I hope that I can use innovating and meaningful strategies and experiences in my classroom to make science relevant to students. Science is being stressed in the United States right now, but it is challenging to engage people in science when so much of the population is not scientifically literate. I hope that I can engage people in viewing science from an interdisciplinary point of view so that the significance of scientific understanding can be more thoroughly appreciated.

My inclinations toward pragmatic and reconstructionist approaches to education lead me to explore new ideas about education. Since the needs of students and society are always variable, it is important that the education system can adapt in order to remain effective. I am very interested in non-traditional school models and pioneering ways that the current model of education can be adapted to forge stronger connections with the community and better prepare students for the future. I believe that the school and the community should be closely linked and serve as mutual resourced to one another. Schools should serve as centers of learning for everyone, not just 5 - 18 year olds, and students should experience learning and serving in their community. I believe curriculums and school management strategies that support this partnership offer huge potential in the way of solving or mitigating social problems in the present and in the future.

REFERENCES

- Clough, M. and Olson, J. (2004). The Nature of Science: Always Part of the Science Story. *The Science Teacher*. 28-31.
- Khishfe, R. and Lederman, N. (2006). Teaching Nature of Science within a Controversial Topic: Integrated versus Nonintegrated. *Journal of Research in Science Teaching*. 43:4, 395-418.
- Lederman, N. and Lederman, J. (2004) Revising Instruction to Teach Nature of Science. *The Science Teacher*. 36-39.
- Orgill, M. and Thomas, M. (January 2007). Analogies and the 5E Model. *The Science Teacher*. 40-45.
- Stephans, J.I, Beiswenger, R.E., & Dyche, S. (1986). Misconceptions Die Hard. *The Science Teacher*, 65-69.